

1 I claim:

2 1. Spring mechanisms for trailer ramp doors, adapted to
3 be completely enclosed in slots formed in rectangular
4 tubular side members of a trailer rear entrance frame,
5 comprising:

6 a pair of springs, each having a top end and a bottom
7 end;

8 means for securely attaching each said top end
9 separately inside each slot formed in each of two side
10 members of a trailer rear entrance frame, and means for
11 securely attaching each said bottom end to the inner
12 surface of each of two flange members, each extending
13 outwardly from each of two side members of a ramp door
14 frame; whereby closing a trailer ramp door inserts each of
15 said springs into each of said slots while each of said
16 flange members completely encloses each of said springs in
17 each of said slots.

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19 2. Spring mechanisms as defined in Claim 1, in which
20 said means for securely attaching each said top end
21 comprises:

22 a pair of yoke members each of which securely holds
23 each of said top ends of said springs, each of said yoke
24 members being inserted into one of said slots and securely
25 attached to the inner surface of one of said side members
26 of said tubular rectangular trailer rear entrance frame.

1 3. Spring mechanisms as defined in Claim 1, in which
2 said means for securely attaching each said bottom end
3 comprises:

4 a pair of yoke members each of which securely holds one
5 of said bottom ends of said springs, each of said yoke
6 members being securely attached at its bottom to the inner
7 surface of one of said flange members.

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9 4. A spring mechanism for a trailer ramp door, adapted
10 to be completely enclosed in a slot formed in a rectangular
11 tubular side member of a trailer rear entrance frame,
12 comprising:

13 a spring having a top end and a bottom end;
14 means for securely attaching said top end inside said
15 slot formed in a side member of a trailer rear entrance
16 frame, and means for securely attaching said bottom end to
17 the inner surface of a flange member extending outwardly
18 from a side member of a ramp door frame; whereby closing a
19 trailer ramp door results in inserting said spring into
20 said slot and said flange member completely encloses said
21 spring in said slot.

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23 5. A spring mechanism as defined in Claim 4, in which
24 said means for securely attaching said top end comprises:
25 a yoke member which securely holds said top end of said
26 spring, said yoke member being inserted into said slot and
27 securely attached to the inner surface of said side member
28 of said tubular rectangular trailer rear entrance frame.

1 6. A spring mechanism as defined in Claim 4, in which
2 said means for securely attaching said bottom end
3 comprises:

4 a yoke member which securely holds said bottom end of
5 said spring, said yoke member being securely attached at
6 its bottom to said inner surface of said flange member.

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8 7. A spring mechanism for a trailer ramp door, adapted
9 to be completely enclosed when said trailer ramp door is
10 closed, comprising:

11 a spring having a top end and a bottom end;

12 a longitudinal flange member extending along a side of
13 a trailer ramp frame and affixed thereto;

14 means for securely attaching the bottom end of said
15 spring to the inner surface of said longitudinal flange
16 member;

17 a longitudinal opening located at the outer surface of
18 a side member of a tubular rectangular trailer rear
19 entrance frame, said opening formed to receive the entire
20 length of said spring and formed to be closed by said
21 longitudinal flange member when said trailer ramp door is
22 closed;

23 means for securely attaching the top end of said spring
24 through said longitudinal opening to the inner surface of
25 said side member; whereby closing said trailer ramp door
26 completely encloses said spring.

1 8. A spring mechanism as defined in claim 7, in which
2 said means for securely attaching said bottom end of said
3 spring comprises:

4 a yoke assembly securely holding said bottom end of
5 said spring, said yoke assembly being securely attached at
6 its bottom to said inner surface of said longitudinal
7 flange member.

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9 9. A spring mechanism as defined in claim 7, in which
10 said means for securely attaching said top end of said
11 spring comprises:

12 a yoke assembly securely holding said top end of said
13 spring, said yoke assembly being inserted through said
14 longitudinal opening and securely attached at its bottom to
15 said inner surface of said side member